DETERMINANTS OF LUMBER PRICES

As bearing on the general problem of all natural resources and the specific problem of the diminishing timber supply, a searching inquiry into the price-determinants of lumber should be valuable. Such an inquiry has recently been made by Mr. Wilson Compton.[1] It is peculiarly timely for two reasons: It concerns an industry whose magnitude[2] in value of product is (1909) surpassed by that of only two other industries. The owners of that industry have within a twelvemonth been petitioning the Federal Trade Commission in public hearings for relief from oppressive trade conditions. The study has the further merit of being one of the few serious attempts to discover correct methods of analyzing the influences which determine the price movement of a given commodity—a subject of no little current significance.

As to the facts of wholesale lumber prices, historically considered, the inquiry shows that from 1880 to 1897, with slight increase in *actual* lumber prices, there was an almost unbroken and a very marked relative rise as compared with general prices. And for the period since 1897 it is shown that both lumber and general prices have risen almost constantly but that the former have moved more rapidly and to a relatively higher point than have the latter.[3]

Indicative of the method of the study, it is assumed that such influences as have caused a rise in general prices, such as a relative increase in money, have been likewise operative in their effects on the prices of lumber.[4] It is therefore proposed to discover

[1] Wilson Compton, *The Organization of the Lumber Industry, With Special Reference to the Influences Determining the Prices of Lumber in the United States* (Chicago: American Lumberman. 1916. Pp. x, 153).

[2] *Thirteenth Census of the United States*, 1910, Abstract, p. 442. The value of lumber and timber products is exceeded only by that of slaughtering and meat-packing products and by that of foundry and machine-shop products. In number of establishments and in number of laborers employed the industry ranks first.

[3] Compton, *op. cit.*, p. 2.

[4] "It is assumed that lumber prices have been affected by all general price influences and that these general factors are an adequate explanation of the historical phenomena of lumber prices *in so far only as such phenomena have coincided with similar phenomena, during the same period, in the movement of general commodity prices.* Peculiar phenomena, however, measured by the extent and by the direction of departure from the course of general

and, so far as is possible, to evaluate those influences which cause the variation of the lumber price curve from the curve of general prices, in other words to segregate and appraise those price-determinants which are peculiar to the industry.[5]

In criticism of the general method of the study it may be seriously questioned whether there is any one influence, even that of the price symbol, money, which has a uniformly equal or proportional effect on specific prices; whether the influences which cause a general price movement necessarily appear at all or in like measure in a specific price movement; whether coincidence of specific and general price movements warrants the conclusion that the specific price movement has been affected by no peculiar influences; and, finally, whether any variation of a specific price movement from a general price movement can be apportioned as so much to this peculiar influence and so much to that.

I

Among the influences regarded by the study as of least weight and therefore worthy of small consideration are foreign trade in lumber, the tariff on lumber, labor conditions in the industry, and transportation costs of the industry's product.[6] The treatment accorded the latter two factors does not appear wholly adequate.

Although the wage item is the largest in lumber manufacturing costs (about 80 per cent),[7] it is not shown that wages have increased relatively no more rapidly than have average wages in other industries. So preponderant, indeed, is the wage factor in lumber manufacturing, that were other factors in all industries to remain stationary and labor costs to increase in like percentages, total costs would increase relatively more in lumber manufacturing than in the average of other industries, resulting, other things equal, in relatively higher prices. It is pointed out that labor troubles have been rare with little curtailment of output arising therefrom to which a rise in price might be attributed.[8] But any

relative prices, are assumed to have been due to peculiar influences, *i.e.*, to causes, not operative upon general commodity prices or not operative to the same degree." *Ibid.*, pp. 108-109.

[5] *Ibid.*, p. 2.

[6] *Ibid.*, pp. 7-18.

[7] E. B. Hazen, Manager, Bridal Veil Lumber Co.: *Chicago Hearings before the Federal Trade Commission,* 1915, pp. 134-136.

[8] "Since 1900 there have been occasional efforts at unionization. In 1911 'The Brotherhood of Timber Workers' newly organized among the woods-

inference drawn from the infrequency of labor troubles that wage increases have lagged behind the average of other industries is not necessarily valid. Such infrequency, it is true, might be the result of non-unionization of lumbering men, a cause in turn of a relative decline in wages, or it might be, on the other hand, the result of contentment with a rising wage. As a matter of statistics the Department of Labor shows[9] that nominal weekly wages in the lumber industry have risen from 102.3 in 1890 to 131.3 in 1913 while general nominal weekly wages appear on good authority[10] to have risen in the same period from 101.3 to 134, a percentage increase in the index number only slightly in excess of that for the lumber industry.

Nor should it be overlooked that efficiency of labor is a factor in the lumber manufacturer's labor costs as significant as money wages. Evidence on the whole may be conflicting, but testimony at the hearings of lumbermen before the Federal Trade Commission was to the effect that labor was less efficient than formerly, owing to widespread substitution of European for American and Canadian laborers.[11] Wages in the lumber industry increasing at approximately the same rate as general wages, efficiency of labor declining, and the wage cost proportionately larger than in other industries—such a complex should constitute a material cause for the relative increase in lumber prices.

II

The transportation costs of lumber, as developed by this study, have affected general lumber prices in the United States:

"First, when the total traffic in lumber has remained constant and the same distribution of such traffic has been maintained

and mill-workers of Louisiana and Texas, was met by a brief lockout instituted by the 'Southern Lumber Operators' Association,' organized in 1906, to combat unionization among employees. A similar lockout occurred in 1912. As a rule, however, lumber manufacture has been free from the disputes which have so harassed other industries. General mill labor is unskilled; the skilled labor has been well paid. Any substantial general curtailment or irregularity of lumber production cannot therefore be attributed to adverse labor conditions." Compton, *op. cit.*, p. 18.

9 *Bulletin of the United States Bureau of Labor Statistics*, Nos. 129 and 153.

10 I. M. Rubinow, "The Recent Trend of Real Wages," The American Economic Review, vol. IV (Dec., 1914), pp. 793-817; and *Bulletin of the United States Bureau of Labor Statistics*, No. 194.

11 John R. Toole, General Manager, Lumber Department, Anaconda Mining Company, and President, Western Pine Manufacturers' Association: *Spokane Hearings*, 1915, p. 18.

among the several sources of lumber supply, while the rates themselves have been either raised or lowered;

"Second, when the rates have remained constant while the proportion of lumber from the more distant sources has increased."[12]

Increasing transportation cost of the second sort is due not to any change in transportation rates, as the study makes clear, but to relative exhaustion of the more accessible timber, a factor considered later.

With respect to changing transportation cost of the first sort due to changing rates, the two things assumed, constancy of total traffic and variation of rates, are inconsistent. Nor would a change in rates ordinarily be reflected wholly in lumber prices, as might be inferred, but in part and conversely in stumpage prices. Suppose that lumber rates should be lowered generally and relatively alike the country over. The immediate effect would be an increase of manufacturing profit, an inflow of new capital or an expansion of old firms to secure this profit, an increased output and traffic (contrary to the assumption that traffic would remain the same), and an enlarged demand for stumpage.

Competition for the lumber market with a decline in lumber prices would occur coincidentally with competition for stumpage and a rise in stumpage prices. The margin of decline in rates appearing first as a manufacturer's profit would tend to be divided between lumber buyer in lower lumber prices and timber seller in higher stumpage prices. If the elasticity of the buyer's demand for lumber were very high and that of the seller's supply of stumpage (equivalent to his demand for returns on stumpage) were very low, this margin might go almost wholly to the stumpage seller in higher prices for stumpage.[13] Only should there be no elasticity of demand for lumber (a condition hardly conceivable with the large use of substitutes available), could we assume that under competitive conditions the total traffic in lumber would remain constant with rising or falling transportation rates and therefore that this change in rates would be reflected wholly in

[12] Compton, *op. cit.*, p. 15.

[13] Assume these conditions as representative of the industry; \$2 per m., the price of stumpage; \$10 per m., the manufacturer's sale price of lumber at destination at which there is a demand of 1,000 m.; \$.25 per m., reduction in rates. Then, under high elasticity of demand for lumber and low elasticity of supply of stumpage a reduction of \$.05 per m. might increase the demand for lumber by 10 m. to call forth the requisite stumpage for which an increase in the price of stumpage of \$.20 per m. might be required.

a change in lumber prices. But the point especially to be noted here is that, contrary to the assumption that lumber prices would vary with transportation rates under constancy of traffic, such prices would be affected by a change in rates, if at all, only as the volume of traffic was affected thereby.

It is also a fair question to raise, whether, if rates were changed relatively alike, distribution of traffic among the several sources of lumber supply could be maintained unchanged. Until stumpage prices were adjusted to the new condition of things, a rise in transportation rates would tend relatively to shut out lumber from the distant source whose price contains a large element of carriage costs; a fall in such rates would tend relatively to shut out lumber from the near source whose price contains a small element of carriage costs.

That there have been no considerable permanent changes in lumber rates, however, either up or down during the past twenty years and that, therefore, increasing lumber prices cannot be due to this price-determinant is convincingly demonstrated by statistical evidence from authoritative sources.[14] The fact is, it could probably be shown that lumber has not carried the average increase of transportation rates on all commodities and that, therefore, influences peculiar to lumber are working in the direction of higher prices to an extent which a comparison of the lumber price curve with the curve of general prices does not disclose.[15]

III

Unwise public land legislation was declared by the Bureau of Corporations[16] to account for the alienation of much of the four

[14] After citing changes in lumber tariffs since 1887 from the three principal producing regions to the three or four chief markets involving fifteen different hauls, it is added: "These statistics have been furnished directly by the Division of Tariffs of the Interstate Commerce Commission. They are up to date to Feb. 21, 1914. The changes since 1894 have not been substantial nor can they have caused any considerable change in the market price of lumber." Compton, *op. cit.*, n. 66, p. 17.

[15] "Between the period of the panic of 1873 and the era of railway and industrial consolidation about 1900 there had been a gradual general decline in rates on competing lines. *The reversal of policy since that time has had little actual influence on lumber rates.* As even a partial explanation therefore of the rise in general lumber prices since 1897, changes in freight rates on lumber, on the average, have been inconsequential." Compton, *op. cit.*, p. 17. Italics are mine.

[16] *The Lumber Industry, Part I*, 1913, pp. 219-271.

fifths of the country's timberland now in private hands and especially for the high concentration of its ownership in certain sections, most notably in the Pacific Northwest. That such high concentration is not an adequate explanation of rising lumber prices is evident, but that it has not contributed some considerable part to that rise and is "proof only of a situation which promises in the future to become a serious challenge to public policy,"[17] are conclusions that seem to be reached by the study through an imperfect analysis of some phases of price making. For example, the "principle of competitive price fixation" is thus developed: "What then has determined the prices of standing timber in all lumber manufacturing regions of the United States? Ultimately, the anticipated prices of the lumber to be sawed therefrom. This price in turn has been *objectively* limited by the competition of lumber from other sources."[18] "Prices" as first used may be assumed to mean current market prices. The "anticipated prices" may reasonably be interpreted as market prices of lumber anticipated for the future by the owners of timber, which discounted to the present determine, under the qualification of financial ability to withhold from current manufacture, their subjective timber prices. These prices are not market prices and have not "been objectively limited by the competition of lumber from other sources," except as the owner's forecast of the future has been influenced by present competition. The market price of standing timber is determined on the supply side by the subjective valuations of all timber owners, which in turn are determined by two principal considerations—a forecast of the future market by an analysis of the probable subjective valuations of future timber owners and lumber consumers and, secondly, financial ability to withhold the timber from the consuming market. Again:

To show that such potential control [concentration in timber ownership in the Pacific Northwest] has in fact been the cause of a rise in the prices of timber by creating an artificial relative scarcity of supply, it must be demonstrated that a scarcity of timber for present use, *i. e.*, manufacture, has actually existed. As long as an effective supply, sufficient to meet all current demands, has remained in the hands of the owners who have been willing to sell—or to manufacture—timber at current prices, can a scarcity distinct from that measure of scarcity due to the relative *total* exhaustion of timber supply be said to have existed?[19]

[17] Compton, *op. cit.*, p. 69.

[18] *Ibid.*, p. 63.

[19] *Ibid.*, p. 62.

Scarcity of supply, however caused, whether by man's withholding (artificial) or by nature's niggardliness or destructive ways (natural), is of the same general character, *viz.*, an insufficient available *quantum* to supply all wants without money and without price; and it exerts a pressure on market price in the same upward direction. So long as a price must be paid to secure any part of that *quantum*, scarcity exists. Any timber that, converted into lumber under existing conditions and marketed at current prices, would pay manufacturing and selling expenses and competitive profits, is physically available and a part of the total *effective* supply, and exerts an influence on price by affecting the subjective valuations of buyers and sellers of timber. Any timber not thus immediately available, but which through physical growth or changed conditions of manufacture, distribution, or market may become available, forms a part of the *potential* supply; and as such affects market price through its influence on the subjective valuations of owners and speculative buyers of timber.

The withholding of any available timber from the mill restricts the amount of lumber offered at a given price, tending to increase the current price of lumber, and so affecting upward the subjective valuations of *all* available timber. It is an influence working in the same direction though not in the same measure as the destruction of such timber by fire—not in the same measure, since it is a comparison of subjective valuations of the several owners with current market prices of timber that determines the total timber offered and thus influences immediately ensuing market prices of timber. Both timber withheld and timber destroyed curtail the potential supply of lumber in the immediate future. In the one instance, however, the timber's existence, even though withheld, makes the subjective valuations of the owners of other timber lower than they would be if the timber were destroyed.

To assert, therefore, that "As long, however, as enough timber has been released at current prices to meet the entire current demand, it cannot be said that the withholding of a part of the total remaining supply of standing timber has necessarily caused an increase in the price,"[20] is to beg the question. It assumes that the current demand in the sense of the amount taken is a fixed thing, alone determining price, whereas it is itself determined *in part* by price, and can mean anything only as it attaches to some specific price. Price is the resultant of total demand ex-

[20] *Ibid.*, p. 62.

pressed by a scale of the subjective valuations of all demanders and total supply expressed by a scale of the subjective valuations of all suppliers. To withhold supply because the supplier's subjective valuation is higher than market price is to exert through limitation of supply at market price an upward influence on the immediately ensuing price quite as truly as to suppress demand because the demander's subjective valuation is lower than market price is to exert through limitation of demand at market price a downward influence on the immediately ensuing price.

The bearing of a correct analysis of price determination on the influence of concentration of ownership on price making is apparent. Concentration *of itself*, however great, does not, it will be conceded, cause higher prices. It is only as it affects withholding that it becomes a price-determining factor. It needs, therefore, only to be demonstrated (1) that concentration, through mobilization of large financial resources with the expectation of controlling the future timber supply, tends to greater withholding and (2) that high concentration does exist, to establish it as a *potential* price-making factor; and (3) that such concentration has already resulted in the withholding of larger amounts of timber from the mill than would otherwise have been withheld to establish it as an *actual* price-making influence in the setting of present high prices.

The demonstration of these propositions the study in review practically makes for us: (1) "The financial strength of many owners has enabled them to withhold their timber from use, while the increase in its value has more than absorbed the accumulated charges against the holdings, *i. e.*, taxes, insurance, interest on investments, etc. . . . Concentrated ownership and superior financial strength have been closely correlated."[21] (2) That high concentration does exist, especially in the Pacific Northwest, is evident if we accept with the study the figures of the old Bureau of Corporations[22] that: "Of the total privately owned timber in the United States, 11 per cent is owned by three corporations; . . . 31.6 per cent by ninety and 38.4 per cent . . . by one hundred and ninety-five holders. . . . Thus one-half of the privately owned timber in the Pacific Northwest is owned by thirty-eight individuals or corporations."[23] And, finally, to clinch, as it

[21] Compton, *op. cit.*, p. 61.

[22] *The Lumber Industry, Part I*, 1913, pp. 12, 20.

[23] Compton, *op. cit.*, p. 61.

were, a line of reasoning pointing to a conclusion not accepted by the study, it appears (3) that this concentration in the Pacific Northwest accompanied by extensive withholding actually began as long ago as 1894: "Extensive withholding of timber from use or sale in deliberate anticipation of higher future prices has been a comparatively recent development in the United States. . . . As a factor affecting supply, the concentration of holdings for investment cannot have been influential before the period, beginning about 1894, of the extension, directly encouraged by the railroads, of the market for West Coast lumber."[24]

The count against concentration, then, is that it squints in the direction of monopoly. It is not that it would exert an undue upward pressure on present timber valuations were these based on an anticipated régime of free competition, but that it tends to valuations based upon the present worth of a future price determined, not in a free and open market but, through a unified control of a dominant portion of the remaining supply, by "what the traffic will bear." So long as the subjective valuations of the owners of such concentrated interest rest on the hypothesis of a free market in the future, the influence thus exerted on present prices will be no different from, nor greater than, that exerted by many small holders whose holdings in the aggregate are equal in amount, whose financial ability is proportionately as great, and whose subjective valuations are similarly based. But when, as is likely to be the case at once, concentration increases the subjective valuations of the owners of such interest, as well as those of others, to an amount equal to the present worth of near-future monopoly prices, present market prices will be increased. The concentration becomes not only a *potential* factor in future monopoly prices but an *actual* factor towards present higher prices—higher than they would be did not the blossom of concentration promise to ripen into the early fruit of monopoly.

Most (approximately 98.5 per cent)[25] of the timber standing at the beginning of any one year is withheld from manufacture during that year. It is not denied that much of this should be included in the potential supply of timber and has value *only* as a speculative holding. Nor is it denied that considerable is owned by small holders. But it is held that large interests, constituting

[24] *Ibid.*, p. 66.

[25] *The Lumber Industry, Part I,* 1913, p. 79. The percentage of total stand cut in 1909, a year of large cut, was 1.6 per cent.

about 55 per cent[26] of the total privately owned timber, contribute to the mill only a small fraction of the cut and that if their cut were in proportion to their stand lumber prices would be substantially lower.

IV

With respect to organized restraint of trade and association activities as a price-determinant the conclusion is reached that greater unformity of lumber prices on possibly a slightly higher level has thereby been attained but that they are no considerable part of the efficient cause of the long upward movement of prices the country over. Where advances have occurred due to restraints, they have been temporary, local, and insignificant.[27] In this respect the study takes issue with the report of the Bureau of Corporations that "association price lists and the so-called 'individual' price lists which were formulated at conferences of lumbermen 'acting as individuals,' have had and do have an important effect on the actual sale prices of lumber."[28] Evidence alone, unimpeachable and ample, is competent to settle the point in dispute.

The increasing potential use of substitutes for lumber is cited as a strong deterrent to the upward tendency of prices.[29] To what extent this influence is peculiar to the products of the lumber industry is not disclosed by the inquiry. If it is not peculiar, *i. e.*, if it is not found here in greater measure than on the average it is found in the consumption of general commodities, it has no proper place in an explanation of the *relative* rise of lumber prices. If among price-depressing influences it is peculiar to lumber, the rise in lumber prices due to peculiar price-advancing influences is greater than a graphic comparison (such as is given in the study) of the lumber price curve with the general price curve would indicate.

26 Compton, *op. cit.*, pp. 12, 13. 69.2 per cent of the timber in the investigation area (this representing 80 per cent of the total privately owned timber of the United States) was in holdings of 60,000,000 feet or more. This would equal 55.36 per cent of the total privately owned timber.

27 Compton, *op. cit.*, p. 143.

28 *The Lumber Industry, Part IV,* 1914, p. 12.

29 Compton, *op. cit.*, pp. 126-129.

V

It is in the relative exhaustion of timber that the study finds the only adequate explanation of the relative increase of general lumber prices, *i. e.*, of the margin of increase of lumber prices over that of general prices.[30] Elaborate data are given to substantiate this fact of exhaustion.[31]

> There are two ways in which exhaustion of timber has tended to cause an increase in the prices of lumber. First, through an increase in the cost of stumpage, logging and delivery to the mill. This effect is summed up in the higher price of logs "in the water," *i. e.*, laid down at the sawmill. Second, through an increase in the average cost of the transporting the lumber from mill to market. This means that there has been an increase in the proportion of the lumber supply which has been marketed at a high transportation cost per unit.[32]

"Cost of stumpage" should hardly be included as a cause of lumber prices. It is clearly an effect of such prices just as land values are an effect of the values of land products. Practically, the "two ways" referred to above are embodied in the one factor of availability. This, together with quality, determines in timber its productivity of a given utility laid down at the point of consumption, as availability and quality of land determine its productivity of a given utility at the point of consumption. Demand remaining constant or increasing, any diminution in the total actual or potential supply of the producing agent results in a higher valuation of the utility produced.

This statement of the case, however, seems to need further clarification. Only as relative exhaustion affects the current supply of lumber relative to the demand, can it affect lumber prices; and it can affect this supply of lumber only by affecting the supply curve of timber—a curve plotting a series of subjective valuations at which the several owners would respectively part with their timber. As this exhaustion becomes more apparent and its meaning more evident, these valuations tend, other things equal, to rise, and, the demand curve of timber constant, to cause the amount of timber offered at the resultant market price to

30 "Analogy to Canadian price phenomena constitutes strong presumptive evidence that natural causes, of which the most influential has been the relative exhaustion of timber supply, are an adequate explanation of the lumber price movements in the United States for the period for which statistics have been presented, 1880 to 1912." Compton, *op. cit.*, p. 124. See also p. 119.

31 *Ibid.*, pp. 116-122.

32 *Ibid.*, p. 116.

diminish. This appears significant in that a proper interpretation of the above qualifying phrase, "other things equal," includes the factor of financial ability to withhold supply of timber from the market, an ability almost invariably possessed by the large holder.[33] Subjective valuation of supplier is determined by his ability to withhold supply from the market quite as much as is the subjective valuation of demander by his ability to purchase.

If no one, however willing, had ability, financial or legal, to withhold timber (or any other natural resource) from use, such resource would have no *market* value. The price of the product therefrom would, with free use of resource, just equal manufacturing and distributing expense and profits. The less accessible resource would not be drawn upon till the more accessible was exhausted. With the exhaustion of the more accessible the price of the product would rise by the amount of the increase of cost of manufacture and distribution. A resource whose product had considerable elasticity of demand would tend to disappear more rapidly under such a régime of free use, since low price accompanied by elastic demand accelerates consumption. If it were deemed socially advisable that the benefit should be spread over a longer period as well as confined within national limits, a charge alike to all would be made by the government for the resource as used.

But in any case, whether consumption were fast or slow, all would share alike either in the gifts of nature (as when society collected from consumer a scarcity-relative-to-demand value distributed in turn to all on a per capita basis) or in the proportion of consumption of those gifts (as when no social limits on individual use were imposed). Such would have been the status had the government retained the title to the timber with freedom of use to all under certain common restrictions. Somewhat approximating this status is one of ownership widely scattered, as is

[33] *The Lumber Industry, Part I,* 1913, p. 106: "Persons of small means are not so likely as the large capitalists to share in the gain of timber speculation, even in proportion to their means. Persons whose property is small are likely to want a current income from it; timber held for the rise gives no current income. The small absentee owner can do nothing to protect his property from theft—a danger to which timber is particularly liable; and the speculative owner is apt to be an absentee. Moreover, timber is ill fitted for speculation on a small scale, because, as is fully shown in Chapter V (p. 178), the small owner usually gets materially less than the large owner for precisely similar stumpage."

measurably true of agricultural lands, and inequality of benefit correspondingly diminished. Concentration of ownership, on the other hand, even without monopoly conditions, throws the common heritage of all into the hands of the privileged few, who, contrary to reason that any should profit out of nature's exhaustion without rendition of service, benefit at the expense of the many. That this unearned increment in timber ownership is not small even under a degree of competition is admitted by the lumbermen themselves.[34]

VI

As bearing upon the determination of lumber prices through the withholding of timber, two policies of the government somewhat cursorily treated by the study should be here examined.

First, state and local governments are charged by many with imposing unequal and increasingly heavy taxation burdens on timber lands. It is the fear that future taxes will, together with interest on the investment, more than absorb any future increment in timberland values (an increment itself uncertain) that constitutes the menace to the timber owner and perhaps disposes him towards a present realization on his timber. While the study asserts that "One of the most potent limitations to the withholding of timber from sale is the influence of the taxation of such property,"[35] it minimizes throughout (as shown above) the in-

[34] E. B. Hazen, Manager, Bridal Veil Lumber Company: *Chicago Hearings before the Federal Trade Commission,* 1915, pp. 146-147. He said: "Yes, I made a calculation based on $2.50 an acre for stumpage, our timber running about 50,000 to the acre on the coast, making 5 cents, which was the original price at which the timber passed from the Government in 1890. I had that compounded up to 1915 at 6 per cent, and added one per cent for taxes and one per cent for administration, and I found that stumpage today would stand the owner if there were any such, and I don't know of any operators who have any stumpage that has cost them as little as that,—but it would stand them 34 cents and they could sell their lumber for the next 20 years and carry that load at about a fixed price."

Socially, it matters little whether present owners of a valuable stumpage or prior owners secured it a few short years ago for practically nothing. The fact remains that the aggregate holding profits of a succession of owners are enormous, amounting to 1,000 per cent, 2,000 per cent, and even 5,000 per cent, according to local conditions (*The Lumber Industry, Part I,* 1913, p. XVIII). The Weyerhaeuser purchase from the Northern Pacific is a case in point. In 1900 this tract of 900,000 acres with an average stand of 50,000 feet per acre was bought at 10 to 12 cents per m. Ten years later its average value based on sales of like timber was $2.50 per m. (*Ibid.,* pp. 170, 208-209, 237).

[35] Compton, *op. cit.,* p. 6.

fluence of withholding timber on lumber prices. In the discussion on taxation, however, it is declared "that lumber prices have been affected by timber taxation, if at all, only through its effect upon the holding, and conversely upon the cutting, of timber." While admitting[35] that the evidence collected shows that lumber prices have been thus affected by timber taxation in certain localities and not so affected in others, the study nowhere in detail gives this evidence nor does it substantiate by evidence the conclusion so far as it pertains to taxation that "Neither taxation of timber nor the tariff has had substantial effect on average lumber prices."[36]

The facts in the case may warrant this conclusion but neither facts cited nor reasoning followed makes clear that result. It is as though to reach this conclusion the argument, with missing links supplied, ran thus: Taxes under certain conditions constitute a menace to the timber owner's speculative profits, thus accelerating cutting; taxes under those conditions have been imposed (not proven); therefore, timber cutting has been accelerated thereby. But timber cutting has little effect on lumber supply or lumber prices (not positively affirmed here but held elsewhere); therefore, the taxation of timber has had no "substantial effect on average lumber prices." Or, the argument may be supposed to run thus: Taxes have not been such as to imperil speculative profits (the converse seems to be affirmed); therefore, timber cutting has not been accelerated thereby; and, therefore, even though timber cutting should affect lumber supply and lumber prices (not admitted elsewhere in the study), taxes as actually laid have had no such effect.

It is an almost universal complaint of lumbermen and a complaint of many forest service experts that unequal and burdensome timber taxation generally exists and is a powerful price depressor through limitation to withholding. But before this conclusion is drawn it is incumbent on the one drawing it to show either that these taxes are so heavy, even though constant, that together with interest they menace an uncertain future increment rendering the holding less profitable than immediate cutting, or that taxes now moderate but growing heavier may together with interest exceed a fairly certain future increment. If uncertainty as to both future taxes and future increment can be shown to exist with probable increase of taxes and decrease of increment

36 Compton, *op. cit.*, p. 129.

an incentive to accelerated cutting is reasonably established. And before the opposite conclusion is reached, such as is drawn by the study, it is incumbent that the opposite showing be made.

If this complaint of the lumberman is borne out by facts which show that taxation is, in the judgment of the timber owner, endangering the increment over other fixed charges thus accelerating the cutting of timber and depressing the price of lumber, and if such taxation is largely peculiar to the industry, then, as in the case of lumber substitutes, the rise in lumber prices due to peculiar price-advancing influences is greater than the study's graphic comparison of lumber and general price curves would disclose, and leaves something to be explained; but if not, taxation has no place in the discussion of a relative rise in lumber prices, except as is competent to show that its burden and effect are not unusual or different.

Second, the government (largely the federal) holds the title to about 629 billion feet, more than one fifth of the total standing timber[37]—a concentration of ownership, even after allowing for differences of quality and accessibility, many times that of the largest single private interest. The policy of the federal government today is to retain title to its timber *land* set apart as national forests, disposing of the timber, if at all, by sale for cutting within a stipulated future time. The average annual sales from the national forests for the five-year period, 1909-1913, amounted to less than one fifth of one per cent of the stand, whereas the average annual cut from all other standing timber for the same period was almost two per cent.[38] The government not only is the largest single holder but sells its timber for cutting at the rate of only one tenth of that of the average private holder and much less than one tenth of that of the average *small* holder—a degree of withholding which exerts an upward influence on lumber and stumpage prices exceeding that of the largest of private interests. Yet it is asserted by the study that the government's policy with respect to the sale of its timber constitutes "a check to any indefinite increase in the prices of stumpage."[39] The relatively small amounts of timber offered for sale, even

[37] *The Lumber Industry, Part I,* 1913, p. 65. 539 billion feet are in national forests.

[38] *Statistical Abstract of the United States,* 1914, pp. 156, 161, 162. Data from reports of the Bureau of Census and the Forest Service.

[39] Compton, *op. cit.,* note, p. 62.

though the minimum price is set at a low point, can have little deterrent effect on *general* lumber prices. The government's heavy ownership may be regarded as potentially a menace to future private monopoly, yet uncertainty as to its future policy respecting its own holdings only adds to the speculative element in private holdings.

If the lumber industry during the years immediately prior to the Great War was suffering more from excessive competition, overproduction, and business losses than was the average industry (as has been stoutly affirmed by its representatives before the Federal Trade Commission),[40] it appears not at all unlikely that its distress was due to private timber speculation. Herein also lies the explanation, in part, of rising and unstable prices to the consumer of lumber, contradictory as these statements may at first appear. Miscalculations respecting future conditions in the lumber market, unwarrantably high subjective valuations on timber, large withholding, high market prices of both timber and lumber, an unloading of timber at high prices on the lumberman who is buying for a long-time period—such is the train of circumstance which may set off a mine of trouble. The demand for lumber is unusually elastic, quickly responding to changes in both price and industrial conditions. If subjective valuations have raised market prices unduly high or disturbance in the industrial mechanism has produced uncertainty, curtailment of demand follows. With ability to meet his carrying charges and with faith in the future the lumberman could be expected to keep his current lumber cut within an amount he could profitably sell, thereby insuring considerable elasticity of total lumber supply and relatively small variations of price. But inability to carry fixed charges under both curtailment of individual output and probable lower prices, and fear that the future holds nothing better in store, cause the lumberman to continue output undiminished, marketing even at a present loss as preferable to greater subsequent loss. True, a great many timber owners are holding their timber in the expectation of ultimate profit if they can but weather the industrial storm. But either their faith in the future or their financial ability is not equal to the additional burden of carrying the timber of the owner forced to liquidate; or, more probably, the profitableness of overseeing and developing widely scattered small tracts under one management appears too uncertain.

[40] *Hearings at Chicago, Spokane, and Tacoma*, 1915.

It is inconceivable that prices should hold up in the face of a declining demand at the old price, supply remaining constant or increasing. A break in prices only accentuates the lumberman's haste to liquidate before irretrievable loss overtakes him, and thus ensue to the industry as a whole cumulative disastrous effects. The *relative* increase of price paid by the consumer of lumber has gone into the pockets not of the one who is playing the double role of manufacturer and speculator but of the original timber holder. If a break in lumber prices occurs it is at the expense largely of the lumberman, not as a manufacturer, but in his character of timber speculator. In any case, much of the fluctuation in lumber prices and most of the uncertainty respecting the lumberman's profit are properly charged to the timber owning and carrying function and not to the sawing and manufacturing operations.

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